



FIG. 1

PRIOR ART TIMING RECOVERY IN A DIGITAL RECEIVER.

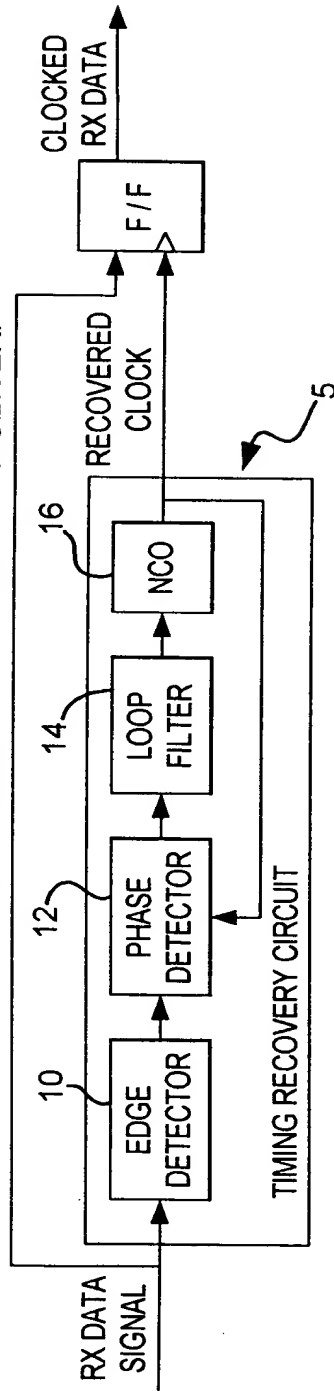


FIG. 2

PRIOR ART

TIMING RECOVERY WAVEFORMS.

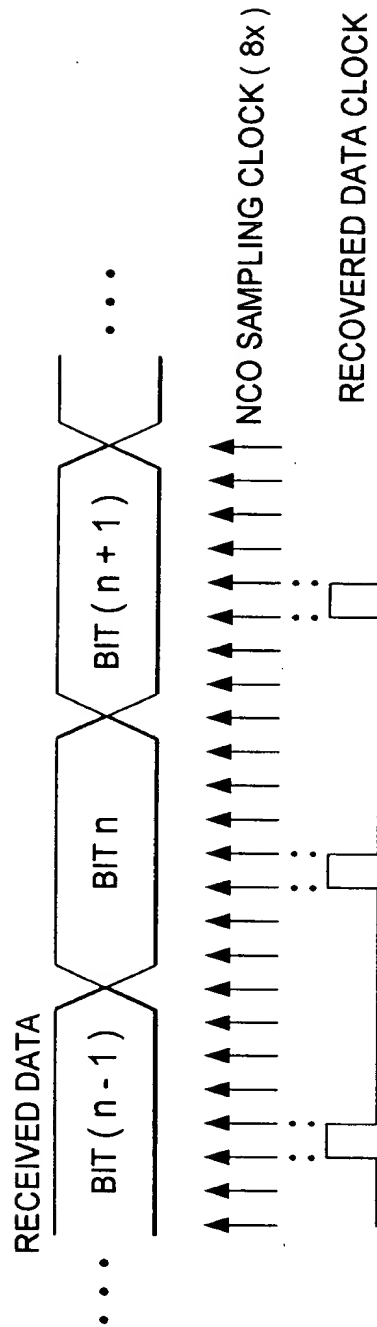
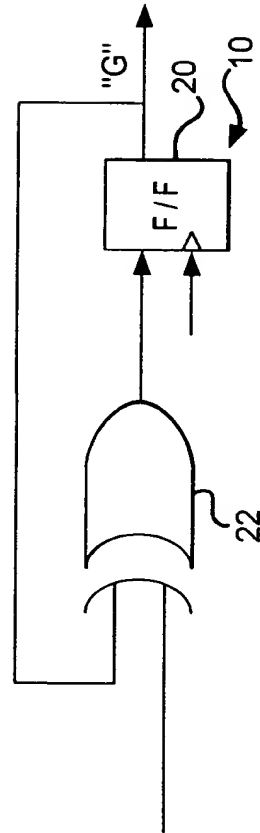


FIG. 3

PRIOR ART

EDGE DETECTOR.



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FIG. 4 NONLINEAR PHASE COUNTER.

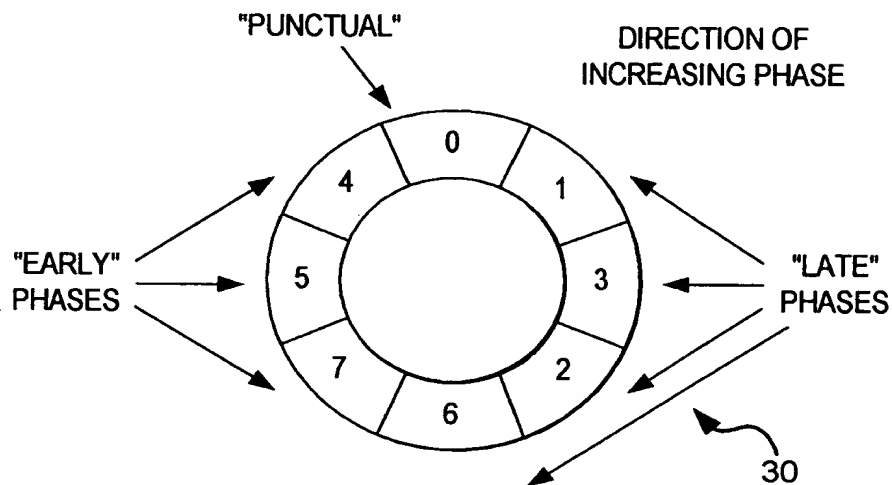
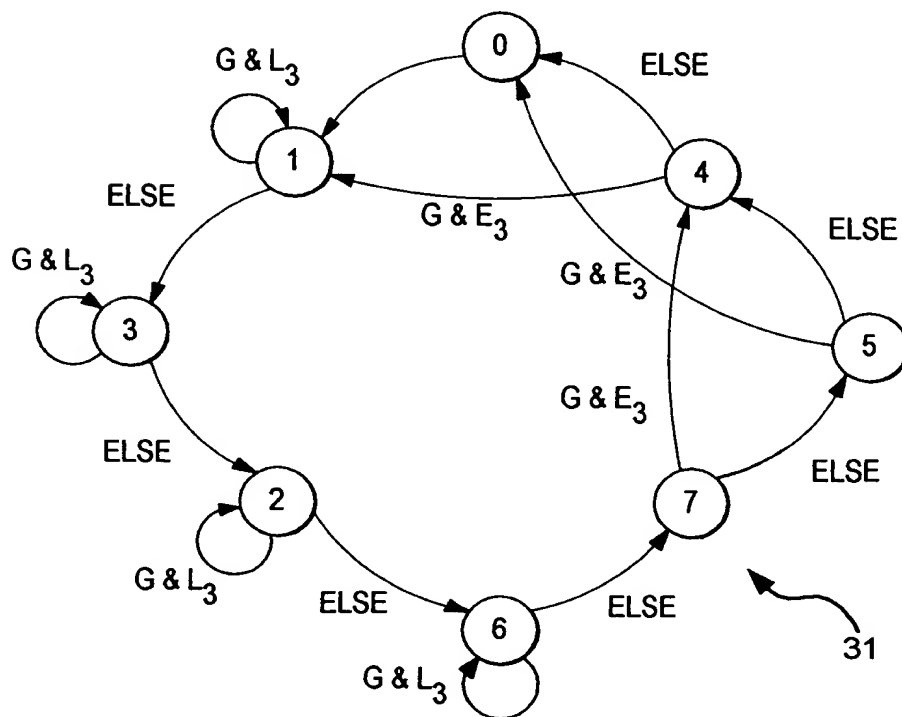
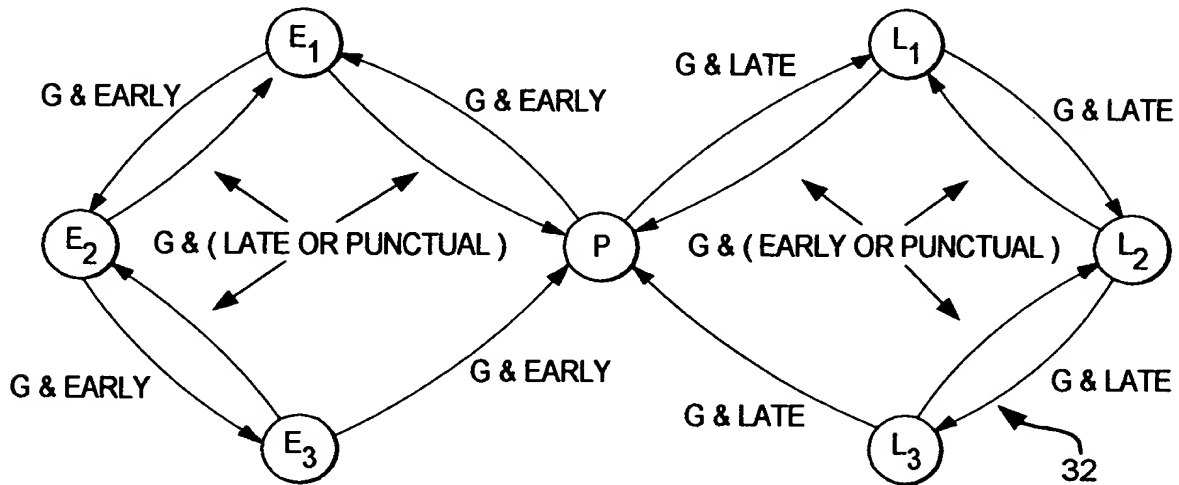
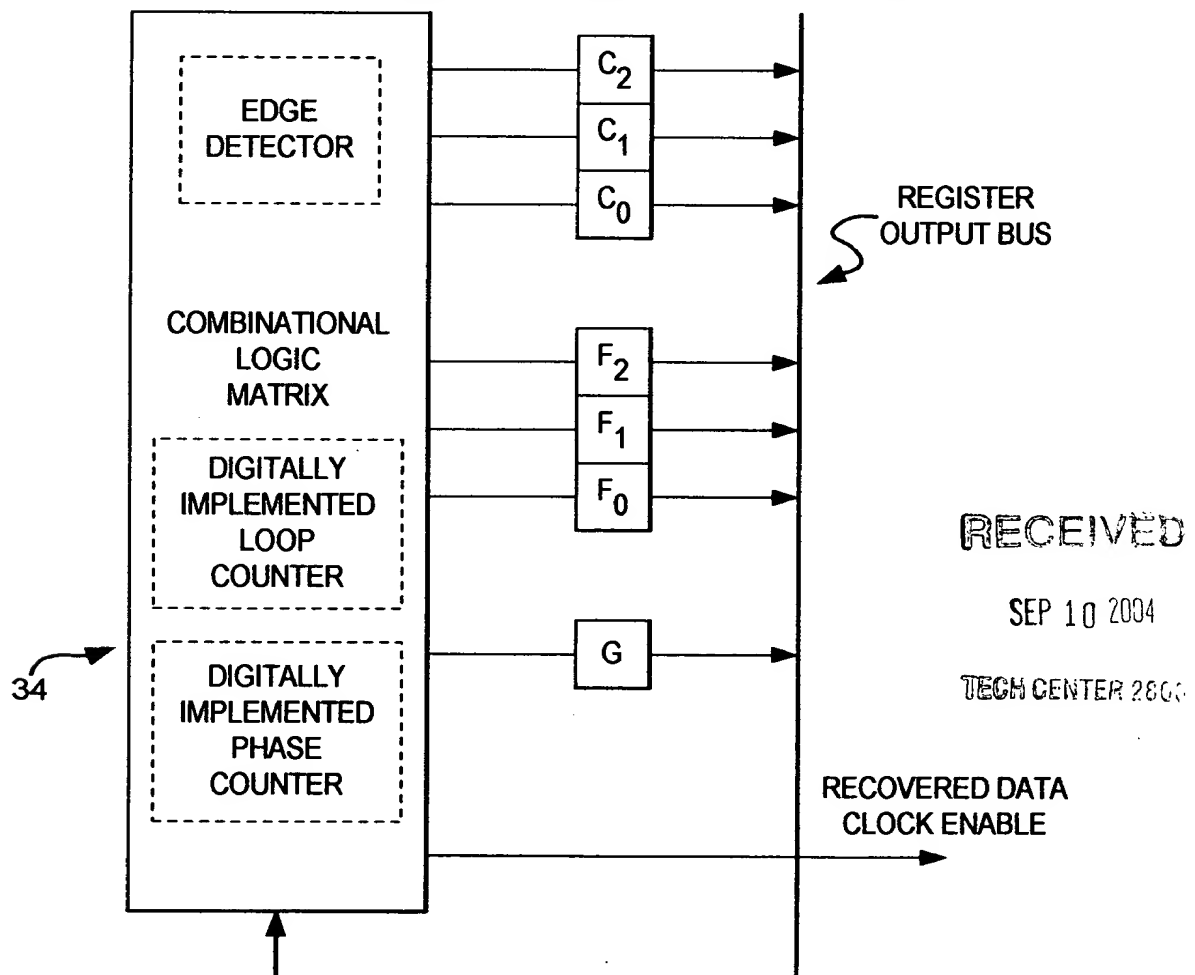


FIG. 5 STATE MACHINE "C", THE PHASE COUNTER.



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**FIG. 6** STATE MACHINE "F", THE LOOP COUNTER.**FIG. 7** LOGIC CIRCUIT IMPLEMENTATION OF SIMPLIFIED TIMING RECOVERY CIRCUIT.

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